

# Icon Medical Solutions, Inc.

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## Notice of Independent Review Decision

**DATE:** February 22, 2013

**IRO CASE #:**

**DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:**

I/P Right TKA with 3-5 Day Stay 27447

**A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION:**

The reviewer is certified by the American Board of Orthopaedic Surgeons with over 40 years of experience.

**REVIEW OUTCOME:**

Upon independent review, the reviewer finds that the previous adverse determination/adverse determinations should be:

Upheld (Agree)

Provide a description of the review outcome that clearly states whether medical necessity exists for each of the health care services in dispute.

**INFORMATION PROVIDED TO THE IRO FOR REVIEW:**

06/24/10, 11/09/10, 12/07/10, 12/14/10: Office Visit by PA-C for DO with Orthopaedics and Sports Medicine, PA

06/30/10: MRI Lumbar Spine WO Contrast report interpreted by Dr. with Health System

07/06/10, 08/03/10, 09/07/10, 10/12/10: Office Visit by DO

07/08/10: Physical Therapy Evaluation from Home Health Care of Inc

07/20/10: MR Arthrogram of the Right Knee report interpreted by Dr. with Health System

07/28/10, 08/03/10: Office Visit by MD with Orthopaedics and Sports Medicine, PA

08/03/10: EMG Bilateral Lower Extremities by MD

08/19/10: Office Visit by MD

08/31/10: CT Lumbar Spine WO Contrast report interpreted by Dr.

11/03/10: Physical Therapy Reevaluation by PT, DPT with Rehabilitation Center

11/03/10: Physical Therapy Discharge Summary by PT, DPT  
11/22/10: Operative Report by DO with Health Systems  
12/14/10: Physical Therapy Initial Evaluation by PT, MPT with Rehabilitation Center  
01/25/11: Therapy Progress Note by PT, DPT, LAT with  
03/22/11, 03/31/11: Office Visit by DO  
07/27/11: Chest 2 Views report interpreted by Dr. with Health System  
08/22/11: Operative Report by, DO  
08/22/11: Fluoro Report interpreted by Dr.  
01/03/12, 02/23/12, 11/15/12: Office Visit by, PA-C for DO  
03/19/12: MRI Right Knee WO Contrast report interpreted by, MD with Imaging  
04/12/12, 07/12/12: Office Visit by DO  
01/22/13: UR Performed by MD  
02/05/13: UR Performed by MD  
02/06/13: Appeal Request from, DO

**PATIENT CLINICAL HISTORY [SUMMARY]:**

The claimant is a male who was injured during a work-related motor vehicle accident on xx/xx/xx. He is status post ORIF right femur with IM rod placed on xx/xx/xx, right knee arthroplasty in xxxx right femur IM rod removal in 2011, and L5-S1 spinal fusion with instrumentation and cage in June 2011.

07/20/10: MR Arthrogram of the Right Knee report interpreted by Dr.

**IMPRESSION:** Cortical irregularity along the posterior aspect of the proximal tibial epiphysis near the insertion of the posterior cruciate ligament consistent with cortical fracture. There is mild edema seen in the proximal tibia. The tibial insertion of the posterior cruciate is not well seen with diffuse increased soft tissue signal intensity and edema noted in this area. The findings are concerning for a complete avulsion of the posterior cruciate ligament at its tibial insertion. There is also thickening and increased signal intensity in the mid portion of the PCL consistent with low-moderate grade sprain. Extrusion of the anterior horn of the medial meniscus from the joint line. No definite meniscal tear is identified. Near full-thickness region of cartilage loss along the anterior aspect of the medial tibial plateau. Additional areas of fissuring of articular cartilage as described above. There appears to be some chondral debris posterior to the lateral femoral condyle.

11/03/10: The claimant was evaluated by PT, DPT for complaints of his knee locking up. He stated that he had difficulty walking due to pain. **ASSESSMENT:** He has seen minimal improvement in the last four weeks with physical therapy and continues to have increased pain complaint. Recommend referral back to physician to see if further medical intervention is warranted with continuation of physical therapy if recommended by physician. Patient would benefit from continued skilled therapy to address the deficits listed above using the following interventions: aquatic therapy, modalities for pain relief, soft tissue mobilization, joint mobilization, strengthening and ROM activities, balance and gait activities,

endurance activities including recumbent bike, nu-step, elliptical, and pt/family education. PLAN: Continue physical therapy 2x/week for 4 weeks.

11/22/10: Operative Report by DO. POSTOPERATIVE DIAGNOSIS: Medial meniscal tear. Lateral meniscal tear. Anterior cruciate ligament tear. Grade 3 chondromalacia of the medial femoral condyle, notch, and patella.

PROCEDURES: Right knee arthroscopy with partial medial and lateral meniscectomies. Abrasion chondroplasty of the medial femoral condyle, notch, and patella. Removal of loose bodies. Debridement of partial anterior cruciate ligament tear tissue. Instillation of platelet-rich plasma to the right knee.

01/25/11: Therapy Progress Note by PT, DPT, LAT. ASSESSMENT: Patient demonstrated progress with reduced pain, tenderness to touch and swelling, increased knee ROM, flexibility, exercise tolerance, hip and knee MMT. Primary deficits present limitations with full ROM, limited hip and knee strength, and unable to perform stairs and squatting tasks without pain. Detailed HEP established with anticipated fair follow through.

08/22/11: Operative Report by DO. POSTOPERATIVE DIAGNOSIS: Right femur fracture with retained painful hardware with proximal and distal locking screws and intramedullary nail. PROCEDURES: Removal of deep retained hardware. Arthrotomy of right knee with removal of intramedullary nail. Platelet rich plasma installation to infrapatellar tendon.

03/19/12: MRI Right Knee WO Contrast report interpreted by MD. IMPRESSION: Postoperative changes. Osteoarthritic changes particularly in the medial compartment. Displacement of the medial meniscus but no evidence of meniscal tear. Large associated joint effusion. Otherwise negative magnetic resonance imaging of the right knee without paramagnetic contrast administration.

04/12/12: The claimant was evaluated by DO for right knee pain. Dr. noted that there was significant laxity giving way to symptoms of his right knee. It was noted that the claimant felt like his knee gave way, almost coming out of place. Dr. noted that the anterior cruciate ligament was at the very least in almost a horizontal position instead of more vertical in the position it should have been in. The posterior cruciate ligament was almost in a more horizontal position, which demonstrated significant laxity and a secondary sign of an anterior cruciate ligament disrupted knee. He had dramatic medial joint space collapse and what looked like subchondral fracturing and collapse of the right knee of the entire medial compartment. It was noted that the radiologist had "just read it as just degenerative osteoarthrosis." Dr. noted that standing x-rays repeated on 04/12/12 and from January revealed significant progressive joint space collapse of the medial aspect of the right knee compared to the left. PLAN: At this time, we have been trying to get the patient in a medial unloader brace for a long period of time and they have never approved. I still do not understand why. At the very least, he needs a medial unloader brace on his right knee. At the very most, I think the patient is getting close to the point some day where he is going to need a

total knee arthroplasty of his right knee. He certainly has continued osteochondral debris with earlier joint space collapse, and what I feel now is a posterior horn medial meniscus tear that may be amenable to follow-up arthroscopy, which has been accomplished in the past because of the cartilage tears associated with the trauma of this leg. Long term, I think the patient needs new right knee. In the immediate term, I think the patient deserves an unloader brace for symptomatic instability and the early joint space collapse that he has. His maximum medical improvement needs to take into consideration the dramatic collapse on his standing films. The patient is at this two-year point on the maximum medical improvement dates. I do not think that there is any chance that this continues to get better. I think the damage is done, and I think it gets progressively worse over time. We repeated standing x-rays and a notch view today to demonstrate the amount of intraarticular collapse, especially of the medial joint space and patellofemoral joint space. It is readily apparent on plain films taken today and films available for review back from January and last summer. At this time, it is progressive, it is worsening, and it is associated with the amount of trauma this leg went through. We will follow the patient up on an as needed basis. It should be noted that I did a 30 minute chart review this morning going through the patient's films, his images, conversations with the radiologist, and review of the entire Workers' Compensation conditions of the leg and what has been doing to this point. He had other injuries at this time as well, even a head injury that was involved with this. I think that any disability rating will have to address the amount of head trauma that the patient went through with his back, his head, and his lower extremities.

07/12/12: The claimant was reevaluated by, DO for knee pain. On physical exam, he had significant lymphedema down his leg. He had swelling where the socks left a bit significant imprint on him. He had thumb prints all the way up basically mid tibia where "you can leave thumb prints in his leg." He did not have the retained hardware in his lower extremity. It was noted that there was significant progression of his x-ray from three months ago with continued collapse. Dr. stated that the claimant had "bone on bone of his right knee and he has subchondral collapse, osteophytic changes, and what looks to be early avascular necrosis even of the medial femoral condyle." It was noted that "we have been trying for a year to get the patient in an unloader brace. Workers' Compensation never approved it." PLAN: Now, I think the only way to keep the patient functional, stable, and get him to where he could be employable and working and being able to stand on his feet on a long-term basis is total knee arthroplasty of his right leg. We are going to work on getting that submitted and taken care of and go from there.

11/15/12: The claimant as evaluated by, PA-C for DO. It was noted that the claimant had significant locking and catching symptoms of his right knee. On examination, he lacked 2 degrees to full extension and had 100 degrees of flexion. Ligamentously, anteriorly to posteriorly and medial to lateral, the knee did feel stable, but he had significant pain through the medial joint space with McMurray's examination with crepitus and clicking with his large osteochondral

fragment noted and seen on x-ray. Review of his right knee x-rays demonstrated a large osteochondral loose body from the collapse that he had “now from not being in a knee brace.” It had collapsed down to the point where he had little to no room in the medial joint space and had a large osteochondral loose body roughly 1 cm circumferentially in the back of the medial compartment. PLAN: In going over this with the patient again today and looking at his x-rays, from the standpoint of pain, we are going to try to help him with a steroid injection in this knee. It is not the end all for pain relief for him. In order for this patient to get back to work where he is able to stand on his feet and hold a job where he can work at least eight hours per day, he is going to need his knee replaced. We will work on getting the patient set up for total knee arthroplasty. We have to get this cleared with Workers’ Compensation and we will go from there. Hopefully, the steroid injection that he had today in the clinical helps the patient with some pain relief. It is not going to make any of the mechanical symptoms better, but should help with pain to some degree.

01/22/13: UR performed by MD. RATIONALE: The recent medical record dated 11/15/12 indicates that the patient continues to experience pain in the right knee. Current physical examination revealed lacks two degrees to full extension and has 100 degrees of flexion. There is significant pain through the medial joint space with McMurray’s examination with crepitus and clicking. Also, the recently x-rays of the right knee showed large osteochondral loose body with medial joint space collapse. Non-operative management is the mainstay in the initial treatment of post-traumatic osteoarthritis. Also, total knee arthroplasty is not indicated in a young individual with one compartment involvement. There was no evidence in the medical reports submitted that the patient has failed other conservative treatment such as medications, activity modification, continuation of physical therapy, and bracing including the objective response from the recent corticosteroid injection prior to the proposed surgery. Based on these grounds, the medical necessity of the request has not been established. Subsequently, the request for three to five days length of stay is not certified.

02/05/13: UR performed by MD. RATIONALE: A prior utilization was performed by Dr. on 12/3/12, who indicated the request for total knee arthroplasty was not certified as there was no independent x-ray evaluation for confirmation of pathology. The claimant had continued knee pain despite two surgical interventions. An MRI study was performed in March 2012 documenting mild osteoarthritis in the medial compartment of the right knee. An unloader brace had been prescribed, but had not yet been approved as a trial of conservative care and there is no documentation of exhaustion of Visco supplementation or recent physical therapy. As all conservative treatments had not been exhausted, the request for knee arthroplasty was not supported. A review for the request for inpatient right total knee arthroplasty three to five day length of stay was performed by Dr., who indicated the claimant continued to experience right knee pain and that current physical examination findings noted lack of 2 degrees of full extension with flexion to 100 degrees. There was significant pain through the medial joint space with McMurray’s examination with crepitus and clicking.

Recent x-rays of the right knee documented a large osteochondral loose body with medial joint space collapse. Nonoperative management was indicated as initial treatment for postoperative arthritis and also a total knee arthroplasty was not indicated in a young individual with one compartment involvement. With no evidence in the medical reports submitted that the claimant had failed other conservative treatment such as medication, activity modification, continuation of physical therapy or bracing and the objective response from recent cortical steroid injections prior to the propped surgery was not noted, the medial necessity was not established and therefore the request is not certified. The two prior non certifications are supported in that the claimant is stated to the xx, and there is no objectification of recent x-ray examination of the right knee, and with a right femur fracture, the entire femur should be radiographed and x-ray of the entire right femur should be obtained and documented. The claimant has not exhausted all lower levels of conservative care including Visco supplementation and a medial unloader brace. There should be recent documentation of exhaustion of medication management. The peer reviewed guidelines indicate if only one compartment of the knee is affected, then unicompartmental arthroplasty may be considered and total knee arthroplasty is indicated for two or three compartments that are affected. There should be documentation of night pain, no pain relieved by conservative care, and documentation of functional limitations. Objective physical examination findings should also include individuals over the age of 50 and a body mass index less than 35, imaging studies of standing x-rays or arthroscopies should document pathology, objectification of recent standing x-rays and complete exhaustion of lower levels of conservative care for a one compartment involvement of the knee. The request is not medically supported.

**ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS, AND CONCLUSIONS USED TO SUPPORT THE DECISION:**

The previous adverse decisions are upheld. I would agree with Drs. and . ODG criteria have not been met. The claimant is young. Not all conservative modalities have been considered including medial unloading knee brace, upper tibial osteotomy, viscosupplementation, or removal of the large loose body. Therefore, the request for I/P Right TKA with 3-5 Day Stay 27447 is not medically necessary and is non certified.

**ODG:**

Knee joint replacement	Recommended as indicated below. Total hip and total knee arthroplasties are well accepted as reliable and suitable surgical procedures to return patients to function. The most common diagnosis is osteoarthritis. Overall, total knee arthroplasties were found to be quite effective in terms of improvement in health-related quality-of-life dimensions, with the occasional exception of the social dimension. Age was not found to be an obstacle to effective surgery, and men seemed to benefit more from the intervention than did women. ( <a href="#">Ethgen, 2004</a> ) Total knee arthroplasty was found to be associated with substantial functional improvement. ( <a href="#">Kane, 2005</a> ) Navigated knee replacement provides few advantages over conventional surgery on the basis of radiographic end points. ( <a href="#">Bathis, 2006</a> ) ( <a href="#">Bauwens, 2007</a> ) The majority of patients who undergo total joint replacement are able to maintain a moderate level of physical activity, and some maintain very high activity levels. ( <a href="#">Bauman, 2007</a> ) Functional exercises after hospital discharge for total knee arthroplasty result in a small to moderate short-term, but not long-term, benefit. In the short term physical
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	<p>therapy interventions with exercises based on functional activities may be more effective after total knee arthroplasty than traditional exercise programs, which concentrate on isometric muscle exercises and exercises to increase range of motion in the joint. (<a href="#">Lowe, 2007</a>) Accelerated perioperative care and rehabilitation intervention after hip and knee arthroplasty (including intense physical therapy and exercise) reduced mean hospital length of stay (LOS) from 8.8 days before implementation to 4.3 days after implementation. (<a href="#">Larsen, 2008</a>) In this RCT, perioperative celecoxib (Celebrex) significantly improved postoperative resting pain scores at 48 and 72 hrs, opioid consumption, and active ROM in the first three days after total knee arthroplasty, without increasing the risks of bleeding. The study group received a single 400 mg dose of celecoxib, one hour before surgery, and 200 mg of celecoxib every 12 hours for five days. (<a href="#">Huang, 2008</a>) Total knee arthroplasty (TKA) not only improves knee mobility in older patients with severe osteoarthritis of the knee, it actually improves the overall level of physical functioning. Levels of physical impairment were assessed with three tools: the Nagi Disability Scale, the Instrumental Activities of Daily Living Scale (IADL) and the Activities of Daily Living (ADL) Scale. Tasks on the Nagi Disability Scale involve the highest level of physical functioning, the IADL an intermediate level, and the ADL Scale involves the most basic levels. Statistically significant average treatment effects for TKA were observed for one or more tasks for each measure of physical functioning. The improvements after TKA were "sizeable" on all three scales, while the no-treatment group showed declining levels of physical functioning. (<a href="#">George, 2008</a>) This study showed that total knee replacement is second the most successful orthopaedic procedure for relieving chronic pain, after total hip. The study compared the gains in quality of life achieved by total hip replacement, total knee replacement, surgery for spinal stenosis, disc excision for lumbar disc herniation, and arthrodesis for chronic low back pain. Hip replacement reduced pain to levels normal for age, reduced physical functioning to within 75% normal levels, and restored quality of life to virtually normal levels. Total knee replacement was the next most successful procedure, and it all but eliminated pain, improved physical functioning to 60% normal, and restored quality of life to within 65% of normal. (<a href="#">Hansson, 2008</a>) A 6-week program of progressive strength training targeting the quadriceps femoris muscle group substantially improves strength and function following total knee arthroplasty for treatment of osteoarthritis, compared to patients who received standard of care therapy; however, addition of neuromuscular electrical stimulation (NMES) to the strength training exercise did not improve outcomes. (<a href="#">Pettersen, 2009</a>) Knee replacement surgery is expensive but worth the cost, especially if performed by experienced surgeons, according to a recent study. Some \$11 billion is spent on 500,000 total knee replacements each year in the United States, and the number is projected to multiply seven times by 2030 because of the aging, overweight population. Over 90% knee replacements are successful, knee pain goes away and patients become more mobile. In the study, knee replacement surgery and subsequent costs added up to \$57,900 per patient, which was \$20,800 more than was spent on those who did not get the surgery. Those who got artificial knees lived more than a year longer in good health than those who did not, and the researchers calculated the added cost per year of good-quality life at \$18,300. (<a href="#">Losina, 2009</a>) In a 7-year prospective study, patients with severe osteoarthritis who had total knee replacement had significant improvements in health-related quality of life, but health outcomes were negatively influenced by obesity and postdischarge complications, and women typically did not get as much benefit from surgery as do men. Overall, 76.8% were satisfied or very satisfied with their total knee replacement, and 79.5% said they would have the surgery again in similar circumstances. (<a href="#">Núñez, 2009</a>) More than 95% of patients report that they are satisfied with the outcome of their total knee replacement 1 year after surgery. Factors that increased risk for dissatisfaction were younger age, being female, valgus alignment of the knee, and posttraumatic arthritis. (<a href="#">Ayers, 2010</a>) Patients undergoing total knee arthroplasty (TKA) should receive ongoing COX-2 Inhibitor</p>
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	<p>therapy for 6 weeks after their procedure, according to this unpublished RCT. (<a href="#">Schroer, 2011</a>) In deciding who should have knee joint replacement surgery for osteoarthritis, we need to balance potential benefits against potential risks, using the concept of capacity to benefit, that the benefits of overcoming functional limitations should considerably outweigh any likely risks or unintended consequences in an individual by a considerable margin for it to be indicated for that person. (<a href="#">Dieppe, 2011</a>) The prevalence of knee pain and knee replacement surgeries has risen substantially during the last 20 years, but the reasons for the increase remain obscure. The rise in knee surgeries may be linked more to an increased awareness of knee pain, as opposed to aging, increased obesity, or radiographic knee osteoarthritis. The authors recommend treating physicians carefully consider, from the signs and symptoms of the patient presenting with knee pain, a broad differential diagnosis, since not all knee pain in middle-aged and older adults is the result of osteoarthritis. (<a href="#">Nguyen, 2011</a>) Knee replacement surgery is a success story of modern medicine, yet consensus is lacking about the precise indications for the procedure. The number of total knee replacements (TKRs) in the United States increased from 31.2 per 100,000 person-years in the period from 1971 to 1976 to 220.9 per 100,000 person-years in 2008, for a total that year of more than 650,000 procedures. Demand for knee replacement will continue to grow in light of aging populations and rising obesity rates, which both portend higher rates of osteoarthritis. Outcomes data break down into those for TKRs vs those for partial-knee replacements (PKRs). Surgeons and their patients sometimes will choose a PKR for the sake of a more normal-feeling knee, less extensive surgery, and a lower risk for infection, knowing that they have the option of converting to a TKR if need be. However, partial replacement has a higher risk for revision surgery than total replacement, and a conversion TKR is more likely to require more follow-up than a primary TKR, according to registry data. In addition to recommending better patient selection and better reporting of outcomes, particularly as it relates to individual implant devices, the authors also call for new strategies to treat early-stage osteoarthritis in younger patients that will avoid the need for major surgery altogether. (<a href="#">Carr, 2012</a>)</p> <p><u>Unicompartmental knee replacement:</u> Recommended as an option. Unicompartmental knee replacement is effective among patients with knee OA restricted to a single compartment. (<a href="#">Zhang, 2008</a>) In this RCT, the early results demonstrated that the unicompartmental knee replacement (UKR) group had less complications and more rapid rehabilitation than the total knee replacement (TKR) group. At five years there were an equal number of failures in the two groups but the UKR group had more excellent results and a greater range of movement. The 15 years survivorship rate based on revision or failure for any reason was 89.8% for UKR and 78.7% for TKR. The better early results with UKR are maintained at 15 years with no greater failure rate. (<a href="#">Newman, 2009</a>) Long-term studies are needed to appropriately define the role of less invasive unicompartmental surgical approaches. (<a href="#">Borus, 2008</a>) Unicompartmental knee arthroplasty (UKA) and total knee arthroplasty (TKA) are both recommended for the treatment of medial compartment osteoarthritis in the varus knee. Citing the arduous rehabilitation and bone loss associated with traditional knee arthroplasty, some opt for UKA, especially in young, high-demand patients. (<a href="#">McAllister, 2008</a>) With appropriate patient selection, UKAs are a successful option for patients with osteoarthritis. (<a href="#">Dalury, 2009</a>)</p> <p><u>Bicompartmental knee replacement:</u> Not recommended. See separate entry for <a href="#">Bicompartmental knee replacement</a>.</p> <p><u>Obesity:</u> After total knee arthroplasty (TKA) for osteoarthritis of the knee, obese patients fare nearly as well as their normal-weight peers. A British research team reports that higher BMI (up to 35) should not be a contraindication to TKA, provided that the patient is sufficiently fit to undergo the short-term rigors of surgery. TKA also halts the decline and maintains physical function in even the oldest age groups (&gt; 75 years). (<a href="#">Cushnaghan, 2008</a>) In this study, the rate of failure of total knee implants, at least up to 5 years after surgery, and the time to failure,</p>
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	<p>were not influenced by patients' BMI, except for subjects affected by morbid obesity, but this group had a small sample size. Based on this evidence, however, it does not appear justified to give low priority to obese subjects for total knee arthroplasty, which would, as a result of restored ability to move, lead to weight loss. (<a href="#">Bordini, 2009</a>) Obese patients presented for and underwent joint replacement surgery at a younger age as compared to nonobese patients. (<a href="#">Gandhi, 2010</a>) Adverse events (eg, perioperative complications, post-op wound infections) occurred in 14.2% of the non-obese, 22.6% of the obese and 35.1% of the morbidly obese patients after total knee replacement. (<a href="#">Dowsey, 2010</a>) A 2-year review of knee and hip replacement surgeries found that complication rates in obese patients were low, supporting doing the procedures even in the heaviest patients, but the review did show that hospital stays were longer in those who were obese than in those who were not. (<a href="#">Parks, 2010</a>) Obese patients may have clinically significant weight loss after total joint arthroplasty, since their osteoarthritis had limited their mobility and ability to exercise. When weight was corrected for natural gain, the overall study population had a trend toward weight loss, and 19.9% of the study population had clinically significant weight loss. (<a href="#">Stets, 2010</a>) Obese patients are nearly twice as likely to incur infection after a total knee replacement, more than 2 times likely to incur deep infection, and slightly more likely to require a surgical revision than those who are not obese, according to a meta-analysis, but even with an elevated complication rate, total knee replacements provide an important improvement for patients with a high BMI. (<a href="#">Kerkhoffs, 2012</a>)</p> <p><u>Minimally invasive total knee arthroplasty:</u> No significant benefit was seen in using a minimally invasive surgical technique over a standard traditional technique for total knee arthroplasty, but the study did not focus on quality-of-life outcomes (eg, length of hospital stay, reliance on pain medications, and the need for inpatient rehabilitation after discharge), in which the minimally invasive approach is purported to show an advantage. (<a href="#">Wülker, 2010</a>)</p> <p><u>Bilateral knee replacement:</u> The safety of simultaneous bilateral total knee replacement remains controversial. Compared with staged bilateral or unilateral total knee replacement, simultaneous bilateral total knee replacement carries a higher risk of serious cardiac complications, pulmonary complications, and mortality. (<a href="#">Restrepo, 2007</a>) Recommend that congestive heart failure and pulmonary hypertension be contraindications for bilateral total knee arthroplasty (BTKA), but not age <i>per se</i>. BTKA is seen as offering advantages over staged unilateral knee replacement surgery, including reduced time in the hospital, decreased costs, and a faster return to active life. The procedure also has been shown, however, to carry an increased risk for morbidity and mortality compared with unilateral knee replacement, with overall incidence of major in-hospital complications and mortality of 9.5%. Patients with the highest risk for adverse outcomes were those with congestive heart failure (odds ratio [OR], 5.5) compared with those without comorbidities, and those with pulmonary hypertension (OR, 4.1). Other risk factors included older age, with patients who were 65 to 74 years old or older than 75 years having about twice the likelihood of complications compared with patients 45 to 65 years old. Men also showed a 50% greater risk for complications than women. Older age, however, should not necessarily rule out patients who can otherwise benefit from bilateral knee replacement, and age by itself will be a risk factor in any kind of surgery. Factors that can increase the risk with congestive heart failure include bone particles and marrow entering the bloodstream to embolize in the pulmonary vasculature and other organs. (<a href="#">Memtsoudis, 2011</a>)</p> <p><u>Revision total knee arthroplasty</u> is an effective procedure for failed knee arthroplasties based on global knee rating scales. (<a href="#">Saleh, 2002</a>) It would be recommended for failure of the originally approved arthroplasty.</p> <p><b>ODG Indications for Surgery™ -- Knee arthroplasty:</b>  <b>Criteria</b> for knee joint replacement (If only 1 compartment is affected, a unicompartmental or partial replacement may be considered. If 2 of the 3 compartments are affected, a total joint replacement is indicated.):</p>
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	<p><b>1. Conservative Care:</b> Medications. AND (Visco supplementation injections OR Steroid injection). PLUS</p> <p><b>2. Subjective Clinical Findings:</b> Limited range of motion (&lt;90° for TKR). AND Nighttime joint pain. AND No pain relief with conservative care (as above) AND Documentation of current functional limitations demonstrating necessity of intervention. PLUS</p> <p><b>3. Objective Clinical Findings:</b> Over 50 years of age AND Body Mass Index of less than 35, where increased BMI poses elevated risks for post-op complications. PLUS</p> <p><b>4. Imaging Clinical Findings:</b> Osteoarthritis on: Standing x-ray. OR Arthroscopy. (<a href="#">Washington, 2003</a>) (<a href="#">Sheng, 2004</a>) (<a href="#">Saleh, 2002</a>) (<a href="#">Callahan, 1995</a>)</p> <p>For average hospital LOS if criteria are met, see <a href="#">Hospital length of stay</a> (LOS). See also <a href="#">Skilled nursing facility LOS</a> (SNF)</p>
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Hospital length of stay (LOS)	<p><b>ODG hospital length of stay (LOS) guidelines:</b></p> <p><b>Knee Replacement</b> (<i>81.54 - Total knee replacement</i>)</p> <p>Actual data -- median 3 days; mean 3.4 days (<math>\pm 0.0</math>); discharges 615,716; charges (mean) \$44,621</p> <p>Best practice target (no complications) -- <i>3 days</i></p>
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**A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION:**

- ACOEM- AMERICAN COLLEGE OF OCCUPATIONAL & ENVIRONMENTAL MEDICINE UM KNOWLEDGEBASE**
- AHCPR- AGENCY FOR HEALTHCARE RESEARCH & QUALITY GUIDELINES**
- DWC- DIVISION OF WORKERS COMPENSATION POLICIES OR GUIDELINES**
- EUROPEAN GUIDELINES FOR MANAGEMENT OF CHRONIC LOW BACK PAIN**
- INTERQUAL CRITERIA**
- MEDICAL JUDGEMENT, CLINICAL EXPERIENCE, AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS**
- MERCY CENTER CONSENSUS CONFERENCE GUIDELINES**
- MILLIMAN CARE GUIDELINES**
- ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES**
- PRESSLEY REED, THE MEDICAL DISABILITY ADVISOR**
- TEXAS GUIDELINES FOR CHIROPRACTIC QUALITY ASSURANCE & PRACTICE PARAMETERS**
- TEXAS TACADA GUIDELINES**
- TMF SCREENING CRITERIA MANUAL**
- PEER REVIEWED NATIONALLY ACCEPTED MEDICAL LITERATURE (PROVIDE A DESCRIPTION)**
- OTHER EVIDENCE BASED, SCIENTIFICALLY VALID, OUTCOME FOCUSED GUIDELINES (PROVIDE A DESCRIPTION)**